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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,357	06/30/2003	Terho Kaikuranta	944-003.176/NC3662SUS	2666

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EXAMINER

HAQ, MOHAMMAD AAMIR

ART UNIT	PAPER NUMBER
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2614

DATE MAILED: 08/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/611,357

Applicant(s)

KAIKURANTA, TERHO

Examiner

Aamir Haq

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 3, 5 - 11 and 13 - 19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1 - 3, 5 - 11 and 13 - 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

1. This action is in response to applicant's amendment filed 6/9/2006.

Claims 1 – 3, 5 – 11 and 13 – 19 are now pending in the present application.

This action is made final.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 5 and 13 recites the limitation "the actuation motor". There is insufficient antecedent basis for this limitation in the claim. Correction is required

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 – 2, 5 – 10 and 13 – 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,588,918 (Yamamoto et al.) hereinafter "Yamamoto" in view of US 6,995,744 (Moore et al.) hereinafter "Moore" further in view of US 6,892,082 (Boesen).

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As to claims 1, 7, 8, 9, 15, 16 and 19, Yamamoto discloses an arrangement for creating a vibration with a low mass actuator, comprising:

a metallic cap (34 and 35 in fig. 1), read as the claimed cover, having two parts coupled by an elastic joint (32 in fig. 1).

a piezo element (36 in fig. 1), read as the claimed low mass actuator, coupled between the two parts (35 and 35), responsive to an actuation signal, for vibrating the two parts of the metallic cap in relation to one another (Abstract, col. 2 lines 27 – 51, col. 3 lines 26 – 55, col. 4 lines 56 – 65, col. 5 lines 18 –25).

Yamamoto does not disclose expressly that the arrangement is a mobile phone. However, Moore discloses that a linear actuator is used to provide inertial movement or vibrations to a handheld device such as a mouse, joystick, mobile phone or any other device that can benefit from inertial force sensations (col. 2 lines 47 - 54, col. 6 lines 22 – 34, col. 5 lines 13 – 29, col. 10 lines 29 – 36 of Moore). Specifically, Moore teaches:

In other embodiments, many other types of interface or control devices may be used with the present inventions described herein. For example, a trackball, a joystick handle, steering wheel, knob, stylus, gun-shaped targeting device, or other device can benefit from inertial force sensations. In addition, handheld devices are quite suitable for use with the presently-described inventions, such as handheld remote control device, gamepad controller for video games or computer games, or handheld electronic device or computer can be used with the haptic feedback components described herein. Handheld devices are not constrained to a planar workspace like a mouse but can still benefit from the sensations described herein which, for example, can be output perpendicularly from a device's surface or which can be output on a joystick handle, trackball, stylus, grip, wheel, or other manipulatable object on the device, or in a desired direction. (col. 5 lines 13 – 29 of Moore)

One of ordinary skill in the art would understand that a mobile phone is a handheld electronic device.

Yamamoto and Moore are analogous art because they are directed to a similar problem solving area, namely vibrating devices. At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the low mass actuator of Yamamoto in a mobile phone in view of the teachings of Moore. The motivation for doing so would have been to make a mobile phone benefit from inertial force sensations (col. 5 lines 15 – 17 of Moore). Yamamoto teaches an actuator that provides vibration in alternating directions (col. 3 lines 48 – 50 and fig. 3 of Yamamoto). Specifically, the actuator creates vibration by moving two pieces in alternating directions. The two pieces moving in alternating directions could be a plurality of different pieces that benefit from vibration. Moore teaches the use of “actuator assembly providing inertial tactile sensations” (Abstract of Moore) in “electronic handheld devices” (col. 5 line 17 – 22 of Moore). Therefore, Moore teaches the use and benefit of creating vibration or inertial tactile sensations in electronic handheld devices (i.e. mobile phone). In view of these teachings, it would be obvious for one of ordinary skill in the art at the time on the invention to apply the design of Yamamoto to a mobile phone casing to provide vibration in the mobile phone casing.

The low mass actuator of Yamamoto could replace the bulky rotating actuator shown in fig. 2 of Moore. The smaller actuator of Yamamoto would thereby maximize space due to its small size. This is a benefit in mobile phone

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design, particularly because the industry is focusing on smaller designs and casings. In addition, by attaching the low mass actuator to the casing, space is saved on the printed circuit board (PCB). Typical rotary actuators are mounted to the PCB, where space is generally at a premium. Therefore, not having the actuator on the PCB would be beneficial to the design engineer.

Moreover, it is notoriously old and well known in the art to make mobile devices vibrate instead of having audible alerts. A vibrating device is required to create the vibration. Therefore, it would have been obvious to combine Moore with Yamamoto to obtain the invention as specified in the claims.

To further substantiate the Office's opinion that one of ordinary skill in the art would understand that a mobile phone is considered a handheld electronic device, the prior art of Boesen is provided. Boesen discloses that the invention is directed to a "handheld personal electronic device" (Abstract of Boesen).

Boesen further discloses, "the present invention relates to personal communication systems, including, but not limited to cellular telephones, personal digital assistants, pagers and Internet appliances" (col. 1 lines 14 – 16 of Boesen). Therefore, it was known at the time of the invention that mobile phones and the like are often referred to as "handheld devices."

As to claims 2 and 10, see col. 3 lines 32 – 36. Note that a silicon rubber reads on the claimed an adhesive layer.

As to claims 5 and 13, applicant has admitted that the low mass actuator is well known in the art (see pages 6 – 7 in applicant's specification), since such

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actuator is well known, then its movement in the range of 5 – 15 microns should also be viewed as a well known range.

As to claims 6 and 14, Moore teaches power supplies for providing power to the actuator. One of ordinary skill in the art at the time of the invention would understand that a power supply could comprise a battery. This is especially the case in mobile electronics such as phones, wireless mice, wireless joystick, etc. (col. 13 lines 15 – 23 of Moore)

As to claims 17 and 18, see fig. 1a, 1b, and col. 5 lines 13 – 18 of Moore. These types of casings are inherently or at the least obviously inelastic material.

4. Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,588,918 (Yamamoto et al.) in view of US 6,995,744 (Moore et al.) in view of US 6,892,082 (Boesen) further in view of US 6,163,077 (Lucas).

As to claims 3 and 11, Yamamoto, Moore and Boesen have been discussed above. Yamamoto does not disclose expressly that the low mass actuator is a linear actuator. However, Yamamoto teaches the same structure and the limitation of the linear actuator is only an intended use. To provide further evidence that this structure is the same and the limitation is only an intended use, Lucas is provided. Lucas states that “In general, the vibrating resonator can provide large amounts of vibrational mechanical power that can be used to drive an electrical alternator, as previously described, or it can be used as a linear motor for many other applications. Linear motors are widespread and

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their uses are well known to those of skill in the art.” (col. 5 lines 23 – 29 of Lucas). Therefore, at the time of the invention it would have been obvious to one of skill in the art to use the low mass actuator as a linear actuator to provide vibrations to the product.

Response to Arguments

5. Applicant's arguments filed 6/9/2006 have been fully considered but they are not persuasive. Applicant argues that the cited passage in Moore et al. do not appear to mention, suggest or hint at using an arrangement such as that in Yamamoto et al. in a mobile phone. The Office respectfully disagrees. Moore teaches providing vibration in “handheld electronic devices” (col. 5 line 21 of Moore). “Handheld electronic devices” reads on the claimed “mobile phone.” See the above rejection for further reasoning.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory

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period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aamir Haq whose telephone number is 571-272-5511. The examiner can normally be reached on Mon thru Fri 8:30am - 5pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on 571-272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A.H.
August 4, 2006

A.H.



WING CHAN
SUPERVISORY PATENT EXAMINER